(Slip Opinion)

NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States* v. *Detroit Lumber Co.*, 200 U.S. 321, 337.

SUPREME COURT OF THE UNITED STATES

Syllabus

MISSISSIPPI *v.* ARKANSAS

ON BILL OF COMPLAINT

No. 48, Orig. Argued December 5, 1973—Decided February 26, 1974

In this boundary dispute between Arkansas and Mississippi over an area known as Luna Bar in the abandoned bed of the Mississippi River between the upstream and downstream ends of Tarpley Cut-off, where Arkansas' Chicot County and Mississippi's Washington County adjoin, the report of the Special Master is adopted, in which he found that Luna Bar was formed by accretion resulting from the gradual westward movement of the Mississippi River, and is therefore part of the State of Mississippi, and not by avulsive process as claimed by Arkansas. Pp. 2–5.

BLACKMUN, J., delivered the opinion of the Court, in which BURGER, C. J., and BRENNAN, STEWART, WHITE, MARSHALL, POWELL, and REHNQUIST, JJ., joined. DOUGLAS, J., filed a dissenting opinion.

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SUPREME COURT OF THE UNITED STATES

No. 48, Orig.

State of Mississippi, Plaintiff, *v.* State of Arkansas. | On Bill of Complaint.

[February 26, 1974]

MR. JUSTICE BLACKMUN delivered the opinion of the Court.

Mississippi, prompted by the pendency of private title litigation in the Arkansas courts,[1] instituted this original action against Arkansas in November 1970. The bill of complaint, which accompanied the motion for leave to file, prayed that the boundary line between the two States, in the old bed of the Mississippi River from the upstream end to the downstream end of Tarpley Cut-off, that is, the Spanish Moss Bend-Luna Bar-Carter Point area where Arkansas' Chicot County and Mississippi's Washington County adjoin, be fixed and determined.

The river was originally established as the boundary between the States by their respective Acts of Admission. Mississippi's Act, 3 Stat. 348 (1817), described the line as "up" the river.[2] Arkansas' Act, 5 Stat. 50–51 (1836), described the line as "up the middle of the main channel of the said river." See, also, Arkansas' Constitution,

[1] See *Arkansas Land & Cattle Co.* v. *Anderson-Tully Co.*, 248 Ark. 495, 452 S. W. 2d 632 (1970), a 4–3 decision of the Supreme Court of Arkansas.

[2] Mississippi's Constitution of 1890, Art. 2, however, reads, "up the middle of the Mississippi river, or thread of the stream."

Art. 1 (1874). Over 50 years ago the question whether there was any difference in the meaning of these two descriptions was resolved and the boundary was determined to be "the middle of the main navigable channel, and not along the line equidistant between the banks." *Arkansas* v. *Mississippi*, 250 U. S. 39, 43 (1919). That decision was in conformity with the rule of the thalweg enunciated in *Iowa* v. *Illinois*, 147 U. S. 1, 7–8, 13 (1893), and followed, in the absence of special circumstances, in many subsequent cases. See, for example, *Minnesota* v. *Wisconsin*, 252 U. S. 273, 281–282 (1920); *New Jersey* v. *Delaware*, 291 U. S. 361, 379–380 (1934); *Arkansas* v. *Tennessee*, 310 U. S. 563, 571 (1940).

Arkansas responded to Mississippi's motion and moved that leave to file be denied and that the complaint be dismissed. The motion for leave to file, however, was granted. 400 U. S. 1019 (1971). Thereafter, the Honorable Clifford O'Sullivan was appointed Special Master. 402 U. S. 926 (1971). The Master's report eventually issued and was ordered filed. 411 U. S. 913 (1973).[3] Arkansas' exceptions to the report and Mississippi's response to those exceptions were forthcoming in due course and the case has been argued to this Court.

Prior to 1935 Spanish Moss Bend was on the thalweg, or primary channel, of the Mississippi River. It has not been the thalweg, however, since the Tarpley Cut-off was established about five miles to the east in 1935 by the United States Corps of Engineers. The present controversy focuses on what is known as Luna Bar on the eastern bank of the old river at Spanish Moss Bend. The issue simply is whether Luna Bar came into being by gradual migration of the river westward, or, instead, by some avulsive process, also to the westward. Depending

[3] Other orders are reported at 402 U. S. 939 (1971) and at 403 U. S. 951 (1971).

on the resolution of this factual issue, legal consequences ensue in line with established principles conceded by the two States to be the law relating to riparian accretion and avulsion. *Nebraska* v. *Iowa*, 143 U. S. 359 (1892); *Missouri* v. *Nebraska*, 196 U. S. 23 (1904); *Bonelli Cattle Co.* v. *Arizona*, — U. S. —, — (1973) (slip opinion, pp. 12–14). These principles need no reiteration here. It sufficies to say that if Luna Bar was formed by accretion, this litigation is to be resolved in favor of Mississippi, and, contrarily, if Luna Bar resulted from an avulsion, the suit is to be resolved in favor of Arkansas.

Upon our independent review of the record, we find ourselves in complete agreement and accord with the findings of fact made by the Special Master.[4] Report 34. We therefore affirm those findings, overrule Arkansas' exceptions to the Master's report, confirm that report, and in general accept the Master's recommendations for a decree.

We deem it unnecessary to outline at length the evidence adduced, or to reproduce here the detailed analysis of that evidence made by the Special Master. We note only that the dissent would regard the case as close because of three factors: (1) certain testimony as to ancient trees on Luna Bar indicated by the presence of three stumps that could not have lived and died there in

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[4] Although the precedent is not binding in this original action between the two States, it is not without interest to note that in private litigation Luna Bar has been determined to be in Mississippi. *Anderson-Tully Co.* v. *Walls*, 266 F. Supp. 804 (ND Miss. 1967). Another private suit involving the issue is the one mentioned above as pending in the Arkansas state courts. *Arkansas Land & Cattle Co.* v. *Anderson-Tully Co.*, *supra*. Further proceedings in that litigation were stayed on February 16, 1971, by the Chancery Court of Chicot County, Arkansas, until final judgment in the present action. Special counsel for the respective States here were counsel for the private parties in the cited federal and state court cases.

the last 100 years, (2) some testimony as to soil on the bar "not compatible with the soil that would be [there] through accretion," *post*, 5, and (3) the bar's "hard core . . . elevation," *post*, 5–6, that coincides with the elevation "on the adjacent Arkansas bank." These factors, in our view, would be pertinent except that they reflect only the approach and testimony of Arkansas' witnesses and overlook pertinent and persuasive testimony to the opposite effect from expert witnesses for Mississippi. The latter are the witnesses that the Special Master credited, as do we, in the evaluation of the conflicting testimony.

Arkansas conceded that Mississippi made out a prima facie case of accretion. Tr. of Oral Arg. 19. In addition, the Master was impressed with the total absence of any known historical reference to an avulsion in this area that changed the course of the river by the necessary half mile. And the dissent acknowledges, *post*, 1, as to how "Mississippi made its case," and concedes that the testimony "gives force to the argument that accretion formed Luna Bar," that there was testimony that in the Mississippi River "avulsion would shorten the course of the river, while here the course was lengthened," and that Mississippi's experts knew of no instance "where avulsion had worked the way Arkansas claims."

So far as the ancient tree stumps are concerned, Mississippi presented evidence from forestry experts that the forest on Luna Bar was one predominantly of pioneer species with the expected small accompanying, scattered areas of secondary and climax trees, and with no tree more than 37 years old. This is consistent with the first appearance of growth upon Luna Bar depicted in early Mississippi River Commission charts showing the bar to be barren and without vegetation. Report 10. Mississippi's position as to the three particular stumps was that they had been washed in by flood waters in preceding

years; that one had moss on its roots, a condition incompatible with growth in place; and that, at the point where another allegedly was found in 1972, the elevation of the bar was at least 10 feet above what it had been 90 years earlier. Thus the stump necessarily should have been deep in the undersoil of the bar and not on its surface at the time of its removal. Report 11.

The soil composition is purely a matter of conflicting testimony and we are persuaded by Mississippi's evidence. Deep borings, of course, would be below the riverbed, and would be expected to be consistent throughout the area on both sides of the river. And, as noted above, charts of 1882 and 1894, admitted into evidence, show Luna Bar as a dry sand bar with no vegetation.

The claim of similar elevations, too, encounters strong and convincing opposing authority. Dr. Charles R. Kolb, a highly qualified expert for Mississippi, testified that his study disclosed that the Arkansas bank, from the first comparative recordings until fairly recent times, was about 12 feet higher than Luna Bar. Report 15, 19. Tr. of Rec. 354–357. And there is an absence of levee formations on Luna Bar, as contrasted with the presence of pre-1860 levees on the Arkansas bank.

We agree with the Special Master's evaluation of the evidence and conclude, as he did, that Arkansas did not sustain its burden of rebutting Mississippi's conceded prima facie case, a burden the Arkansas court has described as "considerable." *Pannell* v. *Earls*, 252 Ark. 385, 388, 483 S. W. 2d 440, 442 (1972).

Upon our own consideration and our independent review of the entire record, of the report filed by the Special Master, of the exceptions filed thereto, and of the argument thereon, a decree is accordingly entered.

It is so ordered.

to the date of the issuance of the report. Any costs and expenses that may be incurred beyond the amount so contributed by the respective litigants shall be borne by the State of Arkansas.

SUPREME COURT OF THE UNITED STATES

No. 48, Orig.

State of Mississippi, Plaintiff, v. State of Arkansas. | On Bill of Complaint.

[February 26, 1974]

MR. JUSTICE DOUGLAS, dissenting.

Luna Bar is today an island in the Mississippi River. Arkansas on the west claims it is hers because the river as a result of an avulsion moved west. Mississippi claims it is hers because Luna Bar was created as a result of slow gradual accretion. The Special Master found for Mississippi and the case is here on exceptions to his Report.

No one has an historical recorded account of what happened. Mississippi made its case by use of experts who testified as to how the Mississippi usually performs. They testified that the river at low water washes the concave side of a turn (this being the side that marks Luna Bar) but that during high water it scours the convex side (that being Arkansas). That testimony gives force to the argument that accretion formed Luna Bar, washing heavily Arkansas land to form the island. Favoring Mississippi was other testimony that at least in the Mississippi avulsion would shorten the course of the river, while here the course was lengthened. Never did the experts know of an instance where avulsion had worked the way Arkansas claims.

Opposed to these highly qualified experts were lay witnesses who knew Luna Bar. They had located great trees that once grew there, the age of the trees going back

before 1800. Luna Bar therefore was not recently created nor was it created within the last one hundred years. It had been there a long, long time. Moreover the soil matched Arkansas' soil and the height of the land on Luna Bar was comparable to Arkansas' elevation. The Arkansas case was further bolstered by the theory that in the 1870's the avulsive action took place when the river returned to its old channel.

The Special Master stated in his reprint:

> "I am aware that as Special Master it is not my function to render a decision. My duty is to make a report containing such review of the evidence as I consider justifies my findings of fact. I do not consider that to make the findings I do, it is necessary to totally destroy the validity of Arkansas' contentions. The burden of persuasion was upon Arkansas. Initially Arkansas conceded that Mississippi had met its initial burden, aided as it was by the presumption that the change in the thalweg of the river was the product of accretion. The quite special character of the reasoning of Arkansas' witnesses leaves me unpersuaded that it has met its burden of proof. I make clear also that I would come to this conclusion even if the burden of proof was not on Arkansas, but was on plaintiff Mississippi."

The case is close and if we were governed by the rule governing district court findings when an appeal is taken I would agree that the Special Master's findings are not "clearly erroneous." Heretofore the Court has not considered itself limited in its review of its Masters by the "clearly erroneous" test.[1] We said in *United*

[1] Rule 52 (a) of the Rules of Civil Procedure provides that findings of fact made by district courts "shall not be set aside unless clearly erroneous." It also provides that "The findings of a Master

States v. *Utah*, 283 U. S. 64, 89, that the "findings of the Master . . . are justified by the evidence"; and in *Kansas* v. *Missouri*, 322 U. S. 213, 232, the Master's judgment "accords with the conclusions we make from our own independent examination of the record." And see *United States* v. *Oregon*, 295 U. S. 1, 29. It has at times been argued that original jurisdiction should not be taken, because of the waste of judicial time by this Court: "In

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to the extent that the court adopts them, shall be considered as the findings of the Court." Rule 53 (e)(2) provides that "In an action to be tried without a jury the Court shall accept the master's findings of fact unless 'clearly erroneous.' " But those Rules are applicable only to "the procedure in the United States district courts in all suits of a civil nature." Rule 1.

But we have never formulated such a rule when it comes to our review of reports submitted by Special Masters whom we have named in cases under our original jurisdiction. It seems inappropriate that we adopt such a rule in view of the delicacy and gravity of many of the issues in these contests between two sovereign states or between the United States and one or more of the States. The ultimate decision on the facts should rest with us, the sole tribunal to which the resolution of the issues in this type of case has been entrusted by Art. III.

In *Georgia* v. *Brailsford*, 3 Dall. 1, the Court in a case under the head of its original jurisdiction impanelled a jury. And that procedure, though soon abandoned, was followed in a few other cases: See Carson, History of the U. S. Supreme Court, Vol. I (1902), p. 169, n. 1.

In *Rhode Island* v. *Massachusetts*, 12 Pet. 657, 734, involving a boundary dispute, the Court said "we may ascertain the facts with or without a jury, at our own discretion, as the circuit courts, and all others do, in the ordinary course of equity" or alternately "a commission of boundary" may be awarded.

In *Pennsylvania* v. *Wheeling and B. Bridge Co.*, 9 How. 647, a commissioner was appointed to hold hearings and report to the Court, Pennsylvania having complained of the erection of a bridge across the Ohio River at Wheeling.

While commissioners were appointed in the early years, the practice this century has been to use Special Masters.

an original suit, even when the case is first referred to a master, this Court has the duty of making an independent examination of the evidence, a time-consuming process which seriously interferes with the discharge of our ever-increasing appellate duties." *Georgia* v. *Pennsylvania R. Co.*, 324 U. S. 439, 470 (Stone, C. J., dissenting). The majority opinion did not dispute that claim but gave special reasons why original jurisdiction was necessary in that case. *Id.*, at 465–466. The findings of the Special Master are of course entitled to respect and their weight will be increased to the extent that credibility of witnesses is involved, as he saw them and heard them, while we have only a cold record. Credibility, however, seems to play no part here. The record consists of maps and of testimony of witnesses. Those testifying for Mississippi qualified as eminent experts. Those testifying for Arkansas were in part experts and in part countrymen who for years knew Luna Bar, frequented it, and studied it. The experts of Mississippi state a plausible explanation that bolsters the theory of accretion. But the countrymen with their physical evidence convince me that the Mississippi acted in an unprecedented way, found an old channel and in one convulsive operation invaded Arkansas, leaving Luna Bar an island carved out of Arkansas.[2]

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[2] The Master found that Arkansas' proof failed to justify a finding that there was an abandoned channel which the Mississippi found again in the 1870's. The absence of independent evidence of such a channel is not surprising, in view of the quality of the maps made before the 1870's. For example, the Master attaches as appendices to his Report six maps of the area charted before the 1870's. All of them trace the outline of the Mississippi for navigational purposes. But none are topographical maps which would show the existence of an ancient, dry, low-lying channel on the Arkansas mainland into which the Mississippi could divert. This, however, does not show that such a channel did not exist nor refute the physical evidence

There is evidence taken from borings that the soil of the island is not compatible with the soil that would be through accretion. An expert, Dr. Clarence O. Durham, head of the Geoscience Department of Louisiana State University spent two days on the island. He concluded that prior to 1823, the date of the first federal Land Office Survey, the river had flowed west of the island but that between 1823 and 1871 the channel at that point was not divided. He reached this conclusion from an 1872 map which showed an abrupt shift of the Arkansas western bank into an abandoned prehistoric channel of the river. The island is the hard base of an ancient clay plug that dates prior to 1823. The ancient cypress stumps on the Arkansas mainland and those on the west side of the island are compelling evidence that the island and the mainland were connected for some centuries. To say that the island was formed by accretion is to use magic to make the ancient cypress stumps on the island disappear. Those trees are of the climax species; and the experts all agree that where climax trees appear the land mass on which they grow is at least 150 years old. The trees found on the high ground of the island were black walnut and red mulberry. Those trees were there prior to 1800 which would be impossible if Luna Bar was the product of accretion in modern times.[3] The hard core

which Arkansas has mustered. Just as Arkansas has not produced a pre-1870 map proving the prior existence of the ancient channel, Mississippi directs us to no map to prove that such a channel did not exist.

[3] The Master stated that the testimony about vegetation and the age of trees on the island was, "as far as I can tell, reasonably comparable" to that presented in two earlier cases concerning the origin of Luna Bar (*Anderson-Tully Co.* v. *Walls*, 266 F. Supp. 804; *Arkansas Land & Cattle Co.* v. *Anderson-Tully Co.*, 248 Ark. 495, 452 S. W. 2d 632). The Master also stated that "it was the position of Mississippi that various stumps found on Luna Bar and Spanish

of the island has an elevation between 133.2 feet and 133.5 feet; and the elevation on the adjacent Arkansas bank is between 132.2 feet and 139 feet.[4] Again there

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Moss Bend had been brought there by flood waters. Its position is such regard was sustained by the courts heretofore considering the matter. I do likewise."

Neither of the earlier cases makes clear the exact extent of testimony admitted, or precisely how it corresponds with the testimony given before the Special Master in the instant case. Arkansas, however, notes that "evidence of the relic trees found on top of the island [was] not discovered at [the time of the earlier litigation], and this record is the only record of their existence." Moreover, it is hardly true that the Arkansas court "sustained" Mississippi's position that the cypress stumps found in Spanish Moss Bend had been carried there by flood waters. That court, remanding the case to the lower court for further proceedings, noted that the appearance of at least two of the stumps in photographs tended to lend support to testimony that they had grown in place. So did the designation of "cypress knees" and "cypress stumps" and trees along the Arkansas shore near the mainland on several early Mississippi River Commission charts. These designations indicated that there was evidence of cypress stumps many years before 1940, when it was contended that they had been floated downriver and left at Luna Bar. 248 Ark., at 502; 452 S. W. 2d, at 637. Finally, the opinion of the District Court in *Anderson-Tully Co.* v. *Walls*, *supra*, does not even mention the cypress stumps. Therefore, as to the ancient relic stumps found on top of the island and in Spanish Moss Bend, it would not seem that we are forced to overcome the decision of any previous court which has accepted Mississippi's theory about their origin.

On the other hand, Richard Proctor, who has lived in the area of Luna Bar for 91 years, testified that he had fished around cypress stumps in the river which had been there "as long as I been big enough to know." Moreover, he testified that he found a mink in an old cistern on the Bar, the existence of which is quite inconsistent with the Point Bar migration theory.

[4] The fact that an early Mississippi River Commission hydrographic survey showed the elevation of Luna Bar to be somewhat lower than that of the land on the west bank of Spanish Moss Bend, the Arkansas side of the river, does not disprove Arkansas' position

is a compelling inference that while accretion may have added some soil to the island, the high hard core of the island was once connected with the mainland and severed from it by some abrupt and violent action of the river.

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that Luna Bar originated as a portion of the Arkansas mainland which was severed by avulsion. Reference to Appendix A of the Court's opinion, a topographic map prepared by the Corps of Engineers, shows the rolling nature of much of the land adjacent to the Mississippi River in the area of Luna Bar and indicates that a difference in elevation between two points would not be startling. Moreover, it appears that in 1874, between the time when Arkansas claims the avulsion occurred and the time the Mississippi River Commission conducted its survey, there was a flood in the Mississippi which would have washed at Luna Bar. See *Arkansas Land & Cattle Co.* v. *Anderson-Tully Co.*; 248 Ark. 495, 506; 452 S. W. 2d 632, 639.